APPENDIX A

The Proposed Count

A magnetic recording medium comprising:

at least one exchange layer structure; and

a magnetic layer formed on said exchange layer structure,

said exchange layer structure including:

a ferromagnetic layer; and

a non-magnetic coupling layer provided on said ferromagnetic layer and under said magnetic layer,

said ferromagnetic layer and said magnetic layer having antiparallel magnetizations.

OR

A magnetic recording medium comprising:

a substrate;

a magnetic recording layer on the substrate and comprising a first ferromagnetic film having a magnetic moment per unit area, a nonferromagnetic spacer film on the first ferromagnetic film, and a second ferrromagnetic film having a magnetic moment per unit area different from the moment per unit area of the first ferromagnetic film and being formed on the spacer film, the second ferromagnetic film being exchange coupled antiferromagnetically to the first ferromagnetic film across the spacer film, the magnetic recording layer exhibiting a major hysteresis loop with two remanent magnetic states in the absence of an applied magnetic field; and

wherein the orientations of the moments of the first and second ferromagnetic films are substantially antiparallel in each remanent state, but the first ferromagnetic film's moment orientation in one remanent state is substantially antiparallel to its orientation in the other remanent state.

APPENDIX B

Claim 26 (Present application). A magnetic recording medium comprising:	Claim 1 (Carey et al. patent). A magnetic recording medium comprising:
a substrate;	a substrate;
a magnetic recording layer on the substrate and comprising a first ferromagnetic layer having	a magnetic recording layer on the substrate and comprising a first ferromagnetic film having
a magnetic moment per unit area,	a magnetic moment per unit area,
a non-magnetic coupling layer on the first ferromagnetic layer, and	a nonferromagnetic spacer film on the first ferromagnetic film, and
a magnetic layer having a magnetic moment per unit area different from the moment per unit area of the first ferromagnetic layer and being formed on the non-magnetic coupling layer,	a second ferrromagnetic film having a magnetic moment per unit area different from the moment per unit area of the first ferromagnetic film and being formed on the spacer film,
the magnetic layer being exchange coupled antiferromagnetically to the first ferromagnetic layer across the non-magnetic coupling layer,	the second ferromagnetic film being exchange coupled antiferromagnetically to the first ferromagnetic film across the spacer film,
the magnetic recording layer exhibiting a major hysteresis loop with two remanent magnetic states in the absence of an applied magnetic field; and	the magnetic recording layer exhibiting a major hysteresis loop with two remanent magnetic states in the absence of an applied magnetic field; and
wherein the orientations of the moments of the first ferromagnetic layer and the magnetic layer are substantially antiparallel in each remanent state,	wherein the orientations of the moments of the first and second ferromagnetic films are substantially antiparallel in each remanent state,
but the moment orientation in one remanent state of at least one of the first ferromagnetic layer and the second magnetic layer is substantially antiparallel to its orientation in the other remanent state.	but the first ferromagnetic film's moment orientation in one remanent state is substantially antiparallel to its orientation in the other remanent state.

APPENDIX C

The terms of new Claims 26-36 of the present application are applied to the disclosure of the present application as follows, where the *italicized* material in parenthesis "*(. . .)*" has been added to indicate the relevant index numbers from the drawings and/or the page and line numbers from the current specification and/or another appropriate description:

Claim 26 *(In this claim, the numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* A magnetic recording medium comprising:

a substrate *(1)*;

a magnetic recording layer *(7, 8 and 9)* on the substrate *(1)* and comprising a first ferromagnetic layer *(7)* having a magnetic moment per unit area *(a common way of expressing magnetization levels, inherent to all magnetized materials)*, a non-magnetic coupling layer *(8)* on the first ferromagnetic layer *(7)*, and a magnetic layer *(9)* having a magnetic moment per unit area different from the moment per unit area of the first ferromagnetic layer *(7) (page 7, lines 31-36 describe two magnetic layers with different thicknesses; when the materials of the layers are the same (as in the Fig. 6 example), the magnetic moments will naturally be different; see also page 11, lines 34-37, which relates to the Fig. 2 embodiment)* and being formed on the non-magnetic coupling layer *(8)*, the magnetic layer *(9)* being exchange coupled antiferromagnetically to the first ferromagnetic layer *(7)* across the non-magnetic coupling layer *(8) (page 13, lines 6-9)*, the magnetic recording layer *(7, 8 and 9)* exhibiting a major hysteresis loop *(Figs. 4 and 6)* with two remanent magnetic states in the absence of an applied magnetic field *(see attached marked-up versions of Figs. 4 and 6, on Appendix Pages D-1 and D-2, where the two remanent states are shown in each graph as points M_R and $-M_R$)*; and

wherein the orientations of the moments of the first ferromagnetic layer *(7)* and the magnetic layer *(9)* are substantially antiparallel in each remanent state, but the moment orientation in one remanent state of at least one of the first ferromagnetic layer *(7)* and the second magnetic layer *(9)* is substantially antiparallel to its orientation in the other remanent state *(see arrows in attached Marked-Up Versions of Figs. 4 and 6, on Appendix Pages D-1 and D-2, where the direction of the upper arrow represents the direction of the magnetic field of the upper layer and the direction of the lower arrow represents the direction of the magnetic field of the lower layer, and further wherein the lengths of the arrows represent the relative magnitudes of the magnetic fields).*

27. *(In this claim, the index numbers in parenthesis refer only to the Fig. 2 embodiment)* The magnetic recording medium as claimed in claim 26, further comprising:

a second non-magnetic coupling layer *(8-1)* below the first ferromagnetic layer *(7)*; and

a second ferromagnetic layer *(7-1)* below the second non-magnetic coupling layer *(8-1)*,

the second ferromagnetic layer *(7-1)* being exchange coupled anti-ferromagnetically to the first ferromagnetic layer *(7)* across the second non-magnetic coupling layer *(8-1) (page 13, lines 3-9 and page 8, lines 11-15).*

28. *(In this claim, the index numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* The magnetic recording medium as claimed in claim 26, wherein:

the first ferromagnetic layer *(7)* has a thickness t1 and a magnetization M1, and

the magnetic layer *(9)* has a thickness t2 and a magnetization M2,

wherein the magnetic moments per unit area (M1 x t1) and (M2 x t2) of the first ferromagnetic layer *(7)* and the magnetic layer *(9)*, respectively, are different from one another *(page 7, lines 31-36 describe two magnetic layers with different thicknesses; when the materials of the layers are the same (as in the Fig. 6 example), the magnetic moments will naturally be different; see also page 11, lines 34-37, which relates to the Fig. 2 embodiment).*

29. *(In this claim, the index numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* The magnetic recording medium as claimed in claim 26, wherein the non-magnetic coupling layer *(8)* is formed of a material selected from a group consisting of Ru, Rh, Ir, and their alloys *(page 9, lines 33-36)*.

30. *(In this claim, the index numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* The magnetic recording medium as claimed in claim 26, wherein the first ferromagnetic layer *(7)* is formed of a material selected from a group consisting of Co, Fe, Ni, and their alloys *(page 9, lines 27-32)* and the magnetic layer *(9)* is formed of a material selected from a group consisting of Co and its alloys *(page 10, lines 8-10)*.

31. *(In this claim, the index numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* The magnetic recording medium as claimed in claim 26, further comprising an underlayer *(5)* located between the substrate *(1)* and the magnetic recording layer *(7, 8 and 9)*.

32. *(In this claim, the index numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* The magnetic recording

medium as claimed in claim 26, further comprising a protection layer *(10)* formed over the magnetic recording layer *(7, 8 and 9)*.

33. *(In this claim, the index numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* A magnetic recording medium comprising:

a substrate *(1)*;

an underlayer *(5)* above the substrate *(1)* ; and

a magnetic recording layer *(7, 8, and 9)* above the underlayer *(5)* and comprising a first Co alloy ferromagnetic layer *(7) (page 9, lines 27-32)* having a magnetic moment per unit area and comprising multiple magnetic domains with orientations of the domains being generally randomly oriented in-plane *(page 9, lines 3-5 disclose that a non-textured medium may be used; multiple magnetic domains are inherent in all magnetic recording mediums, and a random orientation of the domains is inherent in a non-textured medium)*, a non-magnetic coupling layer *(8)* of a material selected from a group consisting of Ru, Rh, Ir, and their alloys *(page 9, lines 33-36)* formed on and in contact with the first Co alloy ferromagnetic layer *(7)*, and a Co alloy magnetic layer *(9) (page 10, lines 8-10)* having a magnetic moment per unit area different than the magnetic moment per unit area of the first Co alloy ferromagnetic layer *(7)* and comprising multiple magnetic domains *(page 7, lines 31-36 describe two magnetic layers with different thicknesses; when the materials of the layers are the same (as in the Fig. 6 example), the magnetic moments will naturally be different; see also page 11, lines 34-37, which relates to the Fig. 2 embodiment)*, the Co alloy magnetic layer *(9)* being formed on and in contact with the non-magnetic coupling layer *(8)*, the non-magnetic coupling layer *(8)* having a thickness sufficient to induce domains of the Co alloy magnetic layer *(9)* to be exchange coupled anti-ferromagnetically to associated domains of the first Co alloy ferromagnetic layer *(7)* across the non-

magnetic coupling layer *(8) (page 9, line 36 through page 10, line 6; page 13, lines 6-9)* with the orientations of the moments of the domains in the Co alloy magnetic layer *(9)* being substantially antiparallel to the orientations of the moments of their associated domains in the first Co alloy ferromagnetic layer *(7) (page 8, lines 11-15; page 10, lines 2-5).*

34. *(In this claim, the index numbers in parenthesis refer only to the Fig. 2 embodiment)* The magnetic recording medium as claimed in claim 33, further comprising:

a second non-magnetic coupling layer *(8-1)* formed below and in contact with the first Co alloy ferromagnetic layer *(7)*; and

a second ferromagnetic layer *(7-1)* formed below and in contact with the second non-magnetic coupling layer *(8-1)*,

the thickness of the second non-magnetic coupling layer *(8-1)* being sufficient to induce the second ferromagnetic layer *(7-1)* to be exchange coupled anti-ferromagnetically to the first Co alloy ferromagnetic layer *(7)* across the second non-magnetic coupling layer *(8-1) (page 12, line 37 through page 13, line 2; page 11, lines 21-25; page 9, line 36 through page 10, line 6; page 13, lines 3-9; page 8, lines 11-15).*

35. *(In this claim, the index numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* The magnetic recording medium as claimed in claim 33, wherein:

the first Co alloy ferromagnetic layer *(7)* has a thickness tl and a magnetization M1; and

the Co alloy magnetic layer *(9)* has a thickness t2 and a magnetization M2,

wherein the magnetic moment per unit area (M1 x tl) and (M2 x t2) of the first Co alloy ferromagnetic layer *(7)* and the Co alloy magnetic layer *(9)*, respectively, are different from one another *(page 7, lines 31-36 describe two magnetic layers with different thicknesses; when the materials of the layers are the same (as in the Fig. 6 example), the magnetic moments will naturally be different; see also page 11, lines 34-37, which relates to the Fig. 2 embodiment).*

36. *(In this claim, the index numbers in parenthesis refer to both the Fig. 1 embodiment and the Fig. 2 embodiment)* The magnetic recording medium as claimed in claim 33, further comprising a protection layer *(10)* formed on the magnetic recoding layer *(7, 8 and 9)*.